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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,480	06/23/2005	Hirozoh Tsuruta	025260-100	2983

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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT	PAPER NUMBER
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1755

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/540,480

Applicant(s)

TSURUTA ET AL.

Examiner

Michael A. Marcheschi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 7, 9, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 9, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/21/06 has been entered.

Claims 1-4, 6-7, 9 and 12-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

After further review of the pending claims, claims 1 and 2 are indefinite as to the limitation that defines "the amount of the basic material based on a total mass of a liquid component of the slurry" because the examiner is unclear as to what the liquid component is. Since the liquid component is not defined, one cannot determine the metes and bounds of the limitation.

New claims 12-13 are indefinite as to the limitation that defines "the amount of the basic material based on a total mass of the liquid component of the slurry" because the examiner is unclear as to what the liquid component is. Since the liquid component is not defined, one cannot determine the metes and bounds of the limitation.

The other claims are indefinite because they depend on indefinite claims.

Claims 1, 4 and 12 are rejected under 35 U.S.C. 103(a) as obvious over Mueller et al.

The reference teaches in the abstract and sections [0017]-[0019] and [0022] and the claims, a composition, in slurry form, comprising an abrasive, an amine (amount defined by reference), a basic material (hydroxide at an amount than can be at least 0.1 wt. percent) and water, wherein the slurry has a pH of 12 or more.

The reference teaches a composition that contains all of the claimed components.

With respect to the amount of water in the independent claim, although not literally defined by Mueller et al., when taking into consideration the ranges of the fluoride, amine, base and abrasive components, the amount of water can be calculated by subtracting this total amount from 100% (since the water is the balance of the composition). When this is done, the amount of water is within the claimed range.

With respect to the organic amine/water mass ratio, when the amount of amine defined by the reference (at least 1 wt. percent or more) and the calculated amount of water, as calculated above, is defined in terms the claimed ratio, the end result is a value which encompasses the claimed value.

With respect to the amount of basic material, the reference defines this as being at least 0.1 wt. percent of the system. When the broad amount of this component is calculated based on a liquid component of the slurry (i.e. water (calculated amount of water above) or amine), the claimed amounts is envisioned.

In view of the above amounts defined by the reference and/or the calculated amounts as being obvious as set forth above, all of the claimed percentage values are encompassed by the

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reference and therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

Claim 3 is rejected under 35 U.S.C. 103(a) as obvious over Mueller et al., as applied to claim 1 above, and further in view of Tredinnick et al.

Tredinnick et al. teaches in the claims a convention size for abrasive used in polishing compositions.

With respect to the abrasive size, although not defined by Mueller et al., this is obvious because Mueller et al. teaches that any suitable polishing particles can be used and it is the examiners position that the lack of an abrasive size implies that any conventional size for the abrasive can be used as long as it provides the necessary abrasive action. In view of this, one skilled in the art would have found it obvious to use any known conventional abrasive size, such as the size defined by Tredinnick et al., as the abrasive particles size according to Mueller et al. because this abrasive particles size is conventionally known to provide the necessary abrasive action in polishing compositions. In addition, one skilled in the art would have appreciated the size required to achieve polishing, said size being conventional in the art, as is clearly shown by Tredinnick et al. Finally, one skilled in the art would have also known by routine experimentation and optimization the desired abrasive size needed to produce the desired abrasive character of the reference polishing composition.

Claims 2, 7, 9 and 13 are rejected under 35 U.S.C. 103(a) as obvious over JP 02262955 in view of Mueller et al. and Rysek et al.

The JP reference teaches in the abstract, a method for cutting a silicon ingot which employs using a cutting slurry comprising an alkaline solution (pH of 9 or more) of an abrasive material, wherein cutting is performed at a temperature within the claimed range. The reference states that the alkaline solution is preferably based on a hydroxide.

In addition to the teachings of Mueller et al. teach in section [0029] that the slurry can be used to polish prime silicon (i.e. prime silicon can be considered to broadly be the same as a silicon ingot in term of the composition thereof).

Rysek suggests in the abstract (last 5 lines) and column 3, lines 48-54 that slurries based on abrasive are known to be used for either cutting or polishing.

The JP reference teaches a method which involves the use of an alkaline abrasive slurry in the cutting of silicon ingots, however, is silent as to the specifically claimed slurry composition in the cutting operation. Although this reference might not mention the use of the claimed specific slurry (one containing an amine), it would have been obvious at the time of the invention to utilize the slurry of Mueller et al., described above, in the method according to the JP reference motivated by the fact that both the slurry of Mueller and the JP reference are alkaline based and are both are known to be used to treat silicon materials. Furthermore, Rysek suggests that slurries based on abrasives are known to be used for **either** cutting or polishing, thus one skilled in the art in view of this teaching would have been motivated to apply the slurry according to Mueller et al. in a cutting operation, such as the one defined by the JP reference.

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With respect to claim 9, the JP reference clearly teaches a method which using this type of cutting.

With respect to the limitations of the slurry, Mueller et al. teaches the claimed limitations for the same reasons defined in the rejection of claims 1, 4 and 12 above which are incorporated in this rejection by reference.

Claim 6 is rejected under 35 U.S.C. 103(a) as obvious over JP 02262955 in view of Mueller et al. and Rysek et al., as applied to claim 2 above, and further in view of Tredinnick et al.

With respect to the abrasive size, although not defined by Mueller et al., this is obvious because Mueller et al. teaches that any suitable polishing particles can be used and it is the examiners position that the lack of an abrasive size implies that any conventional size for the abrasive can be used as long as it provides the necessary abrasive action. In view of this, one skilled in the art would have found it obvious to use any known conventional abrasive size, such as the size defined by Tredinnick et al., as the abrasive particles size according to Mueller et al. because this abrasive particles size is conventionally known to provide the necessary abrasive action in polishing compositions. In addition, one skilled in the art would have appreciated the size required to achieve polishing, said size being conventional in the art, as is clearly shown by Tredinnick et al. Finally, one skilled in the art would have also known by routine experimentation and optimization the desired abrasive size needed to produce the desired abrasive character of the reference polishing composition.

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Applicant's arguments filed 11/21/06 have been fully considered but they are not persuasive.

With respect to the rejection of the slurry, applicants argue that Mueller et al. fails to teach the amount of water and points to sections 0037, 0039 and 0042 of the reference. These sections refer to the examples, and as is known, a reference is not only limited to the teachings in the examples, thus applicants arguments based on the examples are not persuasive. Although the amount of water in the composition according to Mueller et al. is not literally defined, when taking into consideration the ranges of the fluoride, amine, base and abrasive components, the amount of water can be calculated by subtracting this total amount from 100% (since the water is the balance of the composition). When this is done, the amount of water is within the claimed range of 10-40 %.

Applicants also argue that such a broad disclosure of the reference amounts (no upper limits) would not have motivated the skilled artisan to arrive at the claimed invention. The examiner disagrees because the motivation is defined by the reference itself because all of the claimed ranges are either defined or can be calculated from the data of the reference and this is proper motivation to establish that the reference teaches the claimed ranges absent evidence of criticality. Applicants also argue the preferred ranges defined by the reference. In response to this, a reference can be used for all it teaches and is not limited to the preferred embodiments. Even assuming further arguendo, when the preferred amounts for all the components are used, a water content can still be calculated which encompasses the claimed range. Finally, the reference is not limited to the specific preferred amounts defined in the specification, especially since claim 1 of the reference is much broader in scope.

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Applicants also appear to argue hindsight. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants also present arguments to section 0030 of the reference, as this discloses various additives and no guidance is defined for selecting the amounts of additive. Applicants are apparently referring to section 0021 and not 0030, however, the examiner is not relying on this reference for a teaching of the optional additives, thus no further comment is necessary.

Applicants also argue the claimed organic amine to water mass ratio as not being defined by this reference. The examiner disagrees because with the amount of water being indirectly defined (by calculation), when one calculates the mass ratio of the amount of amine to this amount of water, the claimed mass ratio is met.

With respect to the use of Tredinnick et al. (in combination with Mueller et al.), applicants argue this reference alone and not in the context, as applied in the rejection. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

With respect to the method claims, applicants appear to argue that the JP reference, Rysek and Tredinnick et al. do not teach the claimed slurry. Applicants appears to be arguing

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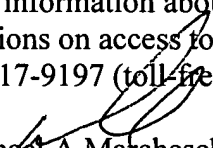
these references alone and not in the context, as applied in the rejection. Although the above references are silent as to the specific slurry, the examiner has made an obviousness determination, and applicants have not clearly argued this. It is improper to argue the references alone when a combination is made. With respect to Mueller et al., the claimed slurry is clearly suggested for the above reasons.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

12/06
MM


Michael A Marcheschi
Primary Examiner
Art Unit 1755